Nova et Vetera.

MODERN FAITH HEALING.

F. ANTON MESMER.

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THE following is a translation of the full text of the report of the French Royal Commission on Animal Magnetism,* a document of the highest importance in the history of medicine. Owing to the great length of the report it has been found necessary to divide it:—

REPORT OF THE COMMISSION.

On March 12th, 1784, the King nominated physicians chosen from the faculty of Paris—MM. Borie, Sallin, d'Arcet, Guillotin—to make an examination and report to him on the animal magnetism practised by M. Deslon; and at the request of these four physicians His Majesty nominated five members of the Royal Academy of Science —MM. Franklin, le Roi, Bailly, de Bory, Lavoisier. M. Borie having died at the beginning of the work of the Commissioners His Majesty chose M. Majault, Doctor of the Faculty, to replace him. The agent which M. Mesmer claims to have discovered, which is made known under the name of animal magnetism, is as he characterizes it himself, and in his own words: "A fluid universally diffused; it is the medium of a mutual influence between the heavenly bodies, the earth, and animate bodies; it is extended so that there is no vacuum; its subtility is beyond comparison; it is capable of receiving, propagating, communicating all the impressions of movement; it is susceptible of flux and reflux. The animal body feels the effect of this agent; and it is by insinuating itself into the substance of the nerves that it directly affects them. One recognizes particularly in the human body properties analogous to those of the magnet; one distinguishes in it poles equally diverse and opposite. The action and the virtue of animal magnetism may be communicated from one body to other bodies animate and inanimate; this action is exerted at a considerable distance without the help of any intermediate body; it is increased, reflected by mirrors; communicated, propagated, augmented by sound; this virtue may be accumulated, concentrated, transported. Although this fluid is universal, all animate bodies are not equally susceptible to its influence; there are even some, although in very small number, which have a property so opposite that their presence alone destroys all the effects of this fluid in other bodies. Animal magnetism can cure immediately diseases of the nerves and mediately the others; it perfects the action of drugs; it induces and directs salutary crises so that one can control them; by its means the physician knows the state of health of each individual, and judges with certainty the origin, nature, and progress of the most complicated diseases; he prevents the development of them, and succeeds in curing them without ever exposing the patient to dangerous effects or troublesome consequences, whatever be the age, the temperament, or the sex. Nature offers him magnetism, a universal means of curing and preserving men." *(Mémoire de M. Mesmer sur la découverte du mag. an.)* Such is the agent which the Commissioners have been directed to inquire into, and the properties of which are avowed by M. Deslon, who admits all the principles of M. Mesmer. This theory forms the basis of a memoir which was read at M. Deslon's house on May 9th in the presence of the Lieutenant-General of Police and the Commissioners.

It is posited in that memoir that there is only one Nature, one disease, one remedy; and that remedy is animal magnetism. That physician, while explaining to the Commissioners the doctrine and procedures of magnetism, taught them the practice of it, making them acquainted with the poles, showing the manner of touching the patients and of directing upon them this magnetic fluid. (1) To prove the existence of animal magnetism. (2) To communicate what he knew about this discovery. (3) To prove the utility of this discovery and of animal magnetism in the cure of diseases. Having made themselves acquainted with the theory and the practice of animal magnetism, it was thought necessary to ascertain the effects. The Commissioners went—each of them several times—to see the treatment of M. Deslon. They saw in the middle of a large room a circular case made of oak and raised about a foot or a foot and a half, which is named the tub (*baquet*). The top of this case is pierced by a number of holes, whence there come out stems of iron bent and movable. The patients are placed in several rows around this tub, and each has his rod of iron, which, by means of the bend, can be applied directly to the diseased part. A cord passed round their bodies unites them to each other. Sometimes a second chain is formed by joining hands—that is to say, applying the thumb between the thumb and first finger of one's neighbour. Then one presses the thumb thus held, the impression received on the left is transmitted to the right, and so goes round. A "pianoforte" is placed in the corner of the room, on which are played different airs with varied movements. Sometimes to this is joined the sound of the voice and song. All those who magnetize have in their hand a rod of iron 10 to 12 in. long. M. Deslon declared to the Commissioners, first, that this rod is a conductor of magnetism. It has the advantage of concentrating it in its point, and of making the emanations more powerful. Secondly, in accordance with the principle of M. Mesmer, is also a conductor of magnetism, and to communicate the fluid to the pianoforte it is sufficient to put the rod of iron near it. The player on the instrument also supplied some, and the magnetism is transmitted by the sounds to the patients round about. Thirdly, the cord round the patients is destined as well as the chain of thumbs to increase the effects by communication. Fourthly, the inside of the tub is so made as to concentrate magnetism in it. It is a large reservoir from which it spreads by the iron rods plunged in it. The Commissioners satisfied themselves later, by means of an electrometer and an iron needle not magnetized, that the tub contains nothing whatever either electric or magnetized. With regard to the declaration of M. Deslon as to the interior composition of this tub, they have not recognized in it any physical agent capable of contributing to the reported effects of magnetism. The patients grouped in large number and in several rows around the tub therefore receive at the same time magnetism by all these means—by the stems of iron, which transmit to them that of the tub; by the cord twined round the body and by the union of thumbs, which communicate to them that of their neighbours; by the sound of the pianoforte or of an agreeable voice, which diffuses it through the air.

The patients are again magnetized directly by means of the finger and the iron rod, directed in front of the face above or behind the head, and on the diseased parts, the distinction of the poles being always observed. One acts on them by the look and fixing the gaze on them. But especially they are magnetized by the application of the hands and by the pressure of the fingers on the hypochondria and on the regions of the lower abdomen, an application which is often continued for a long time, sometimes during several hours. Then the patients present a very varied picture by the different states in which they are. Some are calm, quiet, and feel nothing; others cough, spit, feel some slight pain, a local or a general heat and sweat. Others are agitated and tormented by convulsions. These convulsions are extraordinary in their number, duration, and violence. As soon as one convulsion begins several others manifest themselves. The Commissioners have seen some that lasted three hours. They are accompanied by expectorations of a cloudy and viscous water caused by the violence of the efforts. Sometimes streaks of blood have been seen and among others there is a young male patient who often throws it up in abundance. These convulsions are characterized by rapid involuntary movements of all the limbs and of the whole body by tightening of the throat, jerking movements of the hypochondria and the epigastrium, wildness and confusion in the eyes, piercing shrieks, tears, hiccoughing, and immoderate laughter. They are preceded or followed by a state of languor and dreaminess, a sort of prostration, and even drowsiness The least unexpected noise causes startings, and it has been remarked that the change of tone and time in airs played on the "pianoforte" had an influence on the patient so that

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a livelier movement agitated them more and renewed the vivacity of their convulsions. There is a padded room destined primarily for patients attacked by these convulsions, a room called "the room of crises." M. Deslon, however, does not consider it fitting to make use of it, and all the patients, whatever may be their symptoms, are gathered together in the rooms of public treatment. Nothing is more astonishing than the sight of these convulsions; when one has not seen it one cannot form an idea of it, and in seeing it one is equally surprised both at the deep repose of some of the patients and the excitement of others; the varied symptoms which are repeated, the sympathies which are established. One sees patients seek each other out exclusively, and, hurrying towards each other, smile, speak with affection and calm each other's crises. All are subject to the magnetizer. They may be in an apparent sleep; his voice, a look, a sign, brings them out of it. One cannot help recognizing in these constant effects a great power which excites the patients and dominates them, and of which the magnetizer seems to be the depositary. This convulsive state is improperly called "crises" in the theory of animal magnetism. According to that doctrine it is regarded as a salutary crisis of the character of those caused by Nature, or of those the skilful physician knows how to produce in order to facilitate the cure of the diseases. The Commissioners will adopt that expression in the rest of this report, and when they use the word *crisis* they will always mean the state either of convulsions or of drowsiness in some way lethargic, produced by the procedures of animal magnetism.

The Commissioners have noted that in a number of the patients passing through the crisis there were always many women and few men; that these crises took an hour or two to become established, and that as soon as one was established all the others began successively within a short time. But after these general remarks the Commissioners quickly came to the conclusion that the public treatment could not be the scene of their experiments. The multitude of effects was the first obstacle. Too many things are seen at a time for one to be able to judge of any particular effect. Moreover, distinguished patients who come to the treatment for their health might be annoyed by the questions; careful observation of them might either inconvenience or displease them. The Commissioners themselves would be hindered by their own discretion. They decided, therefore, that it being needless for them to be assiduous in their attendance at the treatment, it was sufficient that some of them should go from time to time to confirm the first general observations, to make new ones, if there were any to be made, and to report to the Commission assembled together. After having observed these effects at the public treatment, they passed on to disentangle the causes and to seek for proofs of the existence and utility of magnetism.

The question of the existence is the first—that of utility can only be treated after the other has been completely settled. Animal magnetism may well exist without being useful, but it cannot be useful if it does not exist. Consequently the principal object of the investigations of the Commissioners and the essential object of their first experiments had to be to assure themselves of that existence. That object by itself was very vast, and had to be simplified. Animal magnetism embraces all Nature; it is, it is asserted, the medium of the influence of the heavenly bodies upon us; the Commissioners believed that they ought first to put aside that great influence, and only consider the part of the fluid spread upon the earth, without troubling themselves whence it comes, and to determine the action which it exerts upon us, around us, and under our eyes; before examining its relations with the universe. The surest means of proving the existence of the magnetic fluid would be to make its presence sensible. But it did not take the Commissioners long to recognize that that fluid escapes the perception of all the senses. It is not luminous and visible, like electricity. Its action does not manifest itself to the sight like the attraction of a magnet; it is without taste and without smell; it proceeds without sound, and surrounds or penetrates you without the sense of touch informing you of its presence. If it exists in us and around us it is therefore in an absolutely insensible manner. Among those who profess magnetism, there are some who pretend that it is sometimes seen coming out of the ends of the fingers which serve as conductors, or who believe that they feel its passage when the finger is passed in front of the face and on the hand.

In the former case the emanation perceived is only that of perspiration, which becomes entirely visible when magnified by the solar microscope; in the second the impression of cold or freshness which is felt, impression all the more marked the hotter one is, results from the movement of the air which follows the finger, and the temperature of which is always below the degree of animal heat. When, on the contrary, the finger is put near the skin of the face, which is colder than the finger, and when it is left in repose, a feeling of heat is caused which is communicated animal heat. It is also pretended that the fluid has a smell, and that it is perceived when the finger or the iron which acts as a conductor is passed under the nose. It is said even that these sensations are different under each nostril, according as the finger or the iron is passed in the direct or the opposite pole. M. Deslon made the experiment on several Commissioners; the Commissioners repeated it on several subjects; not one of them has perceived this difference of sensation in the nostrils; and if in giving one's attention to it one has, in fact, perceived some odour, it is when the iron is passed that of the iron itself heated and rubbed; and when the finger is presented that of the emanations of the sweat, a smell often mingled with that of the iron with which the finger itself is impressed. Therefore M. Deslon has never laid stress on these passing impressions; he has not thought it necessary to produce them as proofs; and on the contrary he has expressly declared to the Commissioners that he could only demonstrate to them the existence of magnetism by the action of that fluid working changes on animate bodies. This existence becomes all the more difficult to determine by effects which should be decisive, and the cause of which shall not be doubtful; by authentic facts, on which moral circumstances can have no influence; lastly, by proofs capable of striking, convincing the mind, the only ones which are of a nature to satisfy enlightened physicists.

The action of magnetism on animate bodies may be observed in two different manners—either by this action long continued, and by its curative effects in the treatment of diseases, or by its momentary effects on the animal economy, and by the appreciable changes which it produces therein. M. Deslon insisted that the former of these methods should be employed principally and almost exclusively. The Commissioners have not thought fit to do so for the following reasons: Most diseases have their seat in the interior of the body. The long experience of a great number of centuries has made known the symptoms which announce and characterize them. The same experience has taught the way to treat them. What is in his method the aim of the physician's efforts? It is not to oppose and subdue Nature; it is to aid her in her operations. Nature cures the sick, the Father of Medicine has said; but sometimes she meets with obstacles which hinder her in her course, which uselessly waste her forces.

The doctor is the minister of Nature; an attentive observer, he studies her course. If that course is firm, sure, equable, and without deviation, the doctor observes it in silence, and takes care not to disturb it by remedies, to say the least, useless; if that way is hindered, he facilitates it; if it is too slow or too rapid, he accelerates or retards it. He confines himself sometimes to regulating the way of life in order to attain his end; sometimes he uses drugs. The action of a remedy introduced into the human body is a new force combined with the great force which makes life; if the remedy follows the same paths which that force has already opened for the expulsion of evils, it is useful, it is salutary; if it tends to open contrary routes and to turn aside this internal action it is harmful. Nevertheless, it must be agreed that this effect, salutary or harmful, absolutely real as it is, may escape common observation. The physical history of man presents very remarkable phenomena in this respect. It is seen that the most opposite régimes have not prevented the attainment of great age. One sees men attacked apparently by the same disease cured by following contrary régimes and taking remedies entirely different; Nature is therefore powerful enough to maintain life notwithstanding a bad

treatment and to triumph at once over the evil and the remedy. If it has this power of resisting remedies, *a fortiori* it has the power of operating without them. The experience of their efficacy is therefore always somewhat uncertain; when we have to do with magnetism there is a further uncertainty, that is, of its existence. Now how can one be assured in the treatment of diseases of the action of an agent whose existence is disputed, when it is possible to doubt the effect of remedies, the existence of which is not problematical? The cure which is cited as most favourable to magnetism is that of the Baron de ——; the Court and the town have equally been informed about it. We will not enter here into a discussion of the facts; we will not examine whether the remedies previously used may have contributed to the cure. It is admitted, on the one hand, that the patient was in a very dangerous state; and, on the other hand, that all the resources of ordinary medicine were of no avail. Magnetism was employed, and the Baron de —— was completely cured. But could not a natural crisis by itself have wrought this cure? A woman of the people, very poor, living at the Gros-Caillou, was attacked in 1779 by a well-marked malignant fever. She steadfastly refused all help, and only asked that a vessel which was beside her should always be kept full of water. She remained quiet on the straw which served as a bed, drinking the water all day, and doing nothing else. The disease developed itself, passed successively through its different stages, and ended in a complete cure.*

Mademoiselle G——, staying in the Petites-Ecuries of the King, had in her right breast two glands which caused her much anxiety; a surgeon recommended the use of the *eau du Peintre* as an excellent solvent, telling her that if the remedy did not succeed within a month it would be necessary to extirpate the glands. The young lady, alarmed, consulted M. Sallin, who judged that the glands were capable of resolution; M. Bouvart, who was afterwards consulted, gave the same opinion. Before commencing the remedies she was advised to try distraction; a fortnight later she was seized at the opera with a cough so violent, and such abundant expectoration, that she had to be taken home; she spat up during the space of four hours about three pints of a glairy lymph; an hour later M. Sallin examined the breast, he found no vestige of glands. M. Bouvart, who was called in the next day, satisfied himself as to the happy effect of this natural crisis. Had Mademoiselle G—— taken the *eau du Peintre* the "painter" would have had the honour of the cure. The constant observation all the centuries prove, and doctors recognize, that Nature alone and without any treatment cures a large number of patients. If magnetism had no action the patients submitted to its procedures would be as though they had been left to Nature. It would be absurd to choose, in order to determine the existence of that agent, a means which in attributing to it all Nature's cures would tend to prove that it has a useful and curative action even when it had none. In this the Commissioners are of the opinion of M. Mesmer. He rejected the cure of diseases when this means of proving magnetism was proposed to him by a member of the Académie des Sciences. It is, said he, "an error to believe that this kind of proof is beyond dispute; nothing proves irrefutably that the doctor or the art of healing cure patients."†

The treatment of diseases can therefore only furnish results always uncertain and often misleading; this uncertainty could only be dissipated and every cause of illusion outweighed by an infinity of cures and, perhaps, by the experience of several centuries. The object and the importance of the Commission call for prompter means. The Commissioners had to confine themselves to purely physical proofs—that is to say, to the momentary effect of a fluid on the animal body—stripping these effects of all illusions which may mingle with them and assuring themselves that they cannot be due to any other cause than animal magnetism. They propose to make experiments on isolated subjects who would be willing to lend themselves to the various experiments which might be devised, and who, some by their simplicity, others by their intelligence, would be able to give a faithful and exact account of what they experienced. These experiments will not be related here in order of time, but in the order of the facts they are intended to elucidate. At the outset the Commissioners resolved to make their first experiences on themselves, and to submit themselves to the action of magnetism. They were very curious to recognize by their own sensations the effects attributed to this agent. They therefore submitted themselves to these effects with such resolution that they would not have been displeased to experience some symptoms and derangement of the health which, if thoroughly recognized as a certain effect of magnetism, would have placed them in a position to reply at once and on their own personal testimony to this important question. But in thus submitting themselves to magnetism the Commissioners took a necessary precaution. There is no person in the very best of health who, if he set himself to observe himself attentively, would not feel within him an infinity of movement and variations, either of infinitely slight pain or of heat in different parts of their body; these variations, which take place at all times, are independent of magnetism. It is therefore not, perhaps, unimportant to direct and fix one's attention thus upon one's self. There are so many relations, whatever be the medium between the will of the soul and the movements of the body, that one could not say how far may go the influence of the attention, which seems to be only a series of acts of the will directed constantly and without interruption to the same object. When one considers that the will moves the arm as it wishes, should one be sure that the attention directed to some internal part of the body cannot excite in it slight movements, set up heat, and modify the actual state so as to produce new sensations? The first care of the Commissioners had to be not to become too attentive to what was going on within them. If magnetism is a real and potent cause, it does not need that they should think of it in order to act and manifest itself; it should so to speak force and fix their attention and make itself perceived by a mind even purposely diverted. But in deciding to make experiments upon themselves the Commissioners unanimously resolved to make these experiments among themselves, without admitting any other person than M. Deslon, or persons chosen by themselves to magnetize them. They also undertook not to magnetize in the "public treatment" so that they might freely discuss their observations and be in all cases the only or at least the first judges of what they should observe. In consequence there was set apart for them in M. Deslon's house, a separate room and a particular tub, and the Commissioners went and placed themselves there once a week. They remained there up to two and a half hours at a time, with the stem of iron pressed on the left hypochondrium, surrounded by the cord of communication, and making from time to time the chain of thumbs. They were magnetized either by M. Deslon or by one of his disciples sent in his place, some longer and more often, and it was the Commissioners who appeared likely to be the most sensitive; they were magnetized sometimes with the finger and the iron rod, presented and passed across different parts of the body, sometimes by the application of hands, and by the pressure of fingers either on the hypochondria or on the pit of the stomach.

None of them felt anything, or, at least, experienced anything, of such a nature as to be attributable to the action of magnetism. Some of the Commissioners are of robust constitution, others of more delicate constitution and subject to infirmities. One of the latter felt a slight pain at the pit of the stomach after the strong pressure which had been made on the part. That pain lasted the whole of that day and the next; it was accompanied by a feeling of fatigue and malaise. A second felt on the afternoon of one of the days, when he was touched, a slight irritation in the nerves to which he is very subject. A third, who is endowed with greater sensibility, and especially with excitability of the nerves, felt greater pain and more marked irritations; but these slight phenomena are the consequence of the perpetual and ordinary variations in the state of health, and consequently have nothing to do with magnetism, or the result from the pressure made on the region of the stomach. The Commissioners only mention these trivial details through scrupulous fidelity; they report them because they have imposed on themselves a law to speak the truth

* This detailed observation was communicated to the Faculty of Medicine of Paris at a meeting *de prima mensis* by M. Bourdois de la Mothe, Physician of the Saint Sulpice Charity, who regularly visited the patient every day.

† M. Mesmer, *Précis historique*, p. 35-37.

always and about everything. The Commissioners could not help being struck by the difference between the public treatment and their private treatment at the tub. Calm and silence in one, movement and excitement in the other. There multiplied effects, violent crises, the habitual state of the body and the mind interrupted and disturbed, Nature excited; here, in a word, the body without pain, the mind without disturbance, Nature preserving both its equilibrium and its ordinary course, absence of all the effects; the greater power which astounds in the public treatment is no longer to be found. Magnetism without energy seems to be devoid of all appreciable action. The Commissioners having at first been to the tub every eight days, wished to try whether a continuous treatment would not produce something. They therefore went three days consecutively, but they remained equally irresponsive and obtained no effect. This experiment, made and repeated at one time on eight persons, several of whom suffer from habitual infirmities, justifies the conclusion that magnetism has either no action or only a slight one in health, and even in a condition of slight infirmity. It was decided to make experiments on persons really ill, and they were chosen from among the lower class.

Seven patients were gathered together in M. Franklin's house at Passy. They were magnetized in his presence and that of the other Commissioners by M. Deslon. The widow Saint Amand, asthmatical, having the belly, thighs, and legs swollen, and the woman Auseaume, who had a tumour on the thigh, felt nothing. The little Claude Renard, a child of 6 years, scrofulous, almost phthisical, having the knees swollen, the leg bent, and the joint almost without movement, an interesting child, more intelligent than is usual at his age, also felt nothing; as was the case with Géneviève Leroux, aged 9 years, attacked with convulsions and a disease resembling that known as St. Vitus's dance. François Grenet felt some effects. His eyes are diseased, especially the right, with which he hardly sees, and where there is a considerable swelling. When the left eye was magnetized, by bringing near and moving the thumbs close for a considerable time, he felt pain in the eyeball, and the eye watered. When the right eye, which was the most diseased, was magnetized he felt nothing. He felt the same pain in the left eye, and nothing anywhere else.

The woman Charpentier, who was thrown to the ground against a log by a cow two years ago, felt several consequences of that accident. She lost her sight, partly recovered it, but remained in a state of chronic infirmity. She has stated that she has two ruptures, and the belly of such acute sensibility that she cannot bear the strings of her petticoats; this sensibility is due to irritated nerves which had become very excitable. The slightest pressure made in the region of the belly may arouse this excitability and produce effects throughout the body owing to the communication between nerves. This woman was magnetized like the others, by application and pressure of the fingers; the pressure was painful to her; then on directing a finger to the rupture she complained of pain in the head; the finger being placed before her face she said she lost the power of breathing. On reiterated movement of the finger from above downwards she had rapid movements of the head and shoulders, as occurs in cases of surprise mingled with fear, such as happens in a person in whose face some drops of cold water would be thrown. It seemed that she felt the same movements with her eyes shut. Fingers were placed under her nose after she had been told to shut her eyes, and she said she would faint if it went on. The seventh patient, Joseph Ennuyé, experienced effects of the same kind, but much less marked. Of these seven patients there were four who felt nothing and the three others felt effects. These effects deserved the attention of the Commissioners and required a scrupulous inquiry. The Commissioners, for their own enlightenment and to settle their ideas on this point, took the course of testing patients placed in other circumstances, patients chosen from among members of the upper class, who could not be suspected of any interested motive, and whose intelligence would be capable of discussing and appreciating their own sensations. Mesdames de B. and de V., MM. M—— and R—— were admitted to the private tub with the Commissioners, they were begged to observe what they felt but without concentrating their attention too much upon it. M. M—— and Madame de V—— were the only ones who felt anything. M. M—— has a cold swelling over the whole knee-joint, and he feels pain in the patella. He declared after having been magnetized that he felt nothing in the whole body except at the moment the finger was passed in front of the diseased knee. He then thought that he felt a slight warmth at the place where he habitually feels pain. Madame de V——, suffering from nervous attacks, has several times been on the point of falling asleep while she was being magnetized. Magnetized for an hour and nineteen minutes without interruption, and most often by application of hands, she felt only agitation and malaise. These two patients came only once to the tub. M. R——, suffering from the remains of a congestion of the liver following a severe obstruction imperfectly cured, came three times and felt nothing. Madame de B——, seriously attacked by obstructions, came constantly with the Commissioners; she felt nothing, and it should be pointed out that she submitted herself to magnetism with perfect tranquillity arising from a great incredulity. Various patients were tested on other occasions, but not around the tub. One of the Commissioners in an attack of migraine was magnetized by M. Deslon during half an hour. One of the symptoms of this migraine was excessive coldness of the feet. M. Deslon put his foot near that of the patient; the foot was not warmed, the migraine lasted the usual length of time, and the patient, having gone back to the fireside, obtained from it the salutary effect which warmth had always wrought on him without having felt, either during the day or the following night, any effect of the magnetism. M. Franklin, although his infirmities prevented his going to Paris and being present at the experiments there made, was himself magnetized by M. Deslon, who went to him at Passy. The assembly was numerous; all present were magnetized. Some patients who had accompanied M. Deslon felt the effects of the magnetism as they usually feel them in the public treatment.

But Madame de B——, M. Franklin, his two female relatives, his secretary, and an American officer felt nothing, although one of Franklin's relatives was convalescent from an illness. The American officer was at the time sick of an intermittent fever. These various experiments supply facts suitable to be placed side by side and compared, from which the Commissioners were able to draw conclusions. Of fourteen patients there were five who seemed to feel effects and nine who felt nothing. The Commissioner who had migraine and cold feet got no relief from magnetism, and his feet were not warmed. That agent, therefore, has not the property attributed to it of communicating heat to the feet. Magnetism is also stated to have the property of making known the nature and especially the seat of the evil by the pain which the action of that fluid infallibly sets up there. This advantage would be precious; the fluid indicative of the evil would be a great means in the hands of the doctor, who is often deceived by equivocal symptoms. But François Grenet only felt some sensation and some pain in the less diseased eye; if the other eye had not been red and swollen, one might have believed it to be intact, judging from the effect of magnetism. M. R—— and Madame de B——, both suffering from obstructions—and Madame de B—— very seriously—having felt nothing, would not have been made aware of the seat or nature of their disease. Obstructions are, however, diseases which are said to be particularly amenable to the action of magnetism, since, according to the new theory, the free and rapid circulation of that fluid through the nerves is a means of clearing the canals and destroying the obstacles—that is to say, the congestions which it meets there. It is said at the same time that magnetism is the touchstone of health; if M. R—— and Madame de B—— had not experienced the disorders and sufferings inseparable from the obstructions they would have been warranted in believing themselves in the best of health. The same may be said of the American officer. Magnetism, which is proclaimed as an indicator of diseases, therefore utterly failed in its effect.

The heat which M. M—— felt in the patella is too slight and too fugitive an effect to form the basis of any conclusion. It may be suspected that it comes from the cause set forth above, that is to say, from too much attention in observing

oneself; the same attention would find similar sensations at any other time when magnetism would not be employed, the drowsiness felt by Madame de V—— arises doubtless from the constancy and weariness of keeping in the same position. If she had some "vaporous" sensations it is known that it is the peculiarity of nervous affections to depend much on the attention paid to them; it is enough to think of them or to hear them spoken of to make them recur. One may judge of what is likely to happen to a woman whose nerves are very excitable and who, magnetized during one hour and nineteen minutes, has during that time no other thought than that of the complaints which are habitual to her. She might have had a nervous crisis more considerable without there being any cause for surprise.

There remained, therefore, only the effects produced on the woman Charpentier, on François Grenet, and on Joseph Ennuyé which may be credited to magnetism. But, then, in comparing these three particular cases with all the others, the Commissioners were struck by the fact that these three patients of the lower class are the only ones who felt anything, whilst those belonging to a higher class, more enlightened, more capable of recognizing their sensations, felt nothing. Without doubt François Grenet felt pain in the eye and lacrymation because the thumb was placed very near his eye. The woman Charpentier complained that on her stomach being touched the pressure corresponded to her rupture, and this pressure may have produced part of the effects which the woman felt; but the Commissioners suspected that these effects had been intensified by moral circumstances.

Let us represent to ourselves the position of a woman of the lower class, consequently ignorant, attacked by a disease and wishing to be cured, brought with fuss before a large assembly consisting of doctors where a treatment altogether new to her is administered, from which she persuades herself beforehand that she is to feel marvellous effects. Let us add that her compliance is paid for, and that she believes that she is pleasing us more by saying that she feels effects, and we shall have natural causes which explain these effects; we shall have at least legitimate reasons for doubting that their true cause is magnetism. Moreover, it may be asked why magnetism had these effects on people who knew what was being done for them, who might believe it to be their interest to say what they did say, whilst it has no hold on the little Claude Renard, on that delicate organization of childhood so excitable and so sensitive. The intelligence and candour of that child give assurance of the truth of his testimony. Why did not that agent produce any effects on Genevieve Leroux, who was in a perpetual state of convulsions? She has certainly excitable nerves. How is it that the magnetism did not manifest itself either in increasing or diminishing her convulsions?

Her indifference and apathy lead to the belief that she felt nothing because the absence of her reason did not permit her to judge that she ought to feel something. These facts allowed the Commissioners to observe that magnetism appears to have no effect in those of the patients who submitted themselves to it with a certain incredulity; that the Commissioners, even those who had more excitable nerves, having purposely diverted their attention, having armed themselves with a philosophic doubt which should accompany every inquiry, have not experienced the impressions felt by the patients belonging to the lower class, and they were led to suspect that these impressions, assuming them all to be real, were the consequence of an anticipated persuasion, and might be an effect of the imagination. There has followed from this another scheme of experiments. Their researches will henceforth be directed towards a new object—that is, to destroy or confirm this suspicion, to determine up to what point the imagination may influence our sensations, and to ascertain if it can be the cause wholly or partly of the effects attributed to magnetism.

Then the Commissioners got word of the experiments made at the house of the Dean of the Faculty by M. Jumelin, Doctor in Medicine; they wished to see these experiments, and they assembled with him at the house of one of them, M. Majault. M. Jumelin told them that he was not a disciple either of Mesmer or of M. Deslon; he had learnt nothing from them about animal magnetism; and on what he had heard reported he conceived principles and planned procedures. His principles consist in looking upon the animal magnetic fluid as a fluid that circulates in all bodies, and which emanates therefrom, but which is essentially the same as that which makes heat; fluid which, like all the others, tending to equilibrium, passes from the body which has the most into that which has the least. His procedures are equally different from those of MM. Mesmer and Deslon. He magnetizes like them with the finger and the iron rod as conductors, and by the laying on of hands, but without any distinction of poles.

Eight men and two women were first magnetized, and felt nothing; lastly, a woman who is door-keeper of M. Alphonse le Roy, Doctor in Medicine, having been magnetized on the forehead but without contact said that she felt heat. M. Jumelin making passes with his hand and presenting the five ends of his fingers over the whole face of the woman, she said that she felt as a flame that wandered about; magnetized in the stomach she said she felt heat in that region; magnetized on the back she said she felt the same heat there; she declared, moreover, that she was hot all over the body and had a headache.

The Commissioners, seeing that of eleven persons subjected to the experiment only one had been sensitive to the magnetism of M. Jumelin, thought she had experienced something only because her imagination was doubtless more easily set in motion; the occasion was favourable for the elucidation of this point. The sensibility of this woman having been proved, the question was only one of sheltering her against her own imagination, or at least of putting her imagination on a wrong scent. The Commissioners proposed to bind her eyes, so as to observe what would be her sensations when one operated without her knowledge. Her eyes were bandaged and she was magnetized; the phenomena no longer corresponded to the parts to which the magnetism was directed. Magnetized successively on the stomach and in the back, the woman only felt heat in the head, pain in the right eye, and in the left eye and ear. Her eyes were unbound, and M. Jumelin, having applied his hands over the hypochondria she said she felt heat there; but at the end of several minutes she said she was going to faint, and in fact she did faint. When she quite recovered herself she was taken in hand again. Her eyes were bandaged; M. Jumelin was put aside, silence was enjoined, and the woman was made to believe that she was magnetized. The effects were the same, although no action was exercised on her, either from near or from afar; she experienced the same heat, the same pain in the eyes and in the ears; she felt, moreover, heat in the back and in the loins. At the end of a quarter of an hour a sign was made to M. Jumelin to magnetize her in the region of the stomach; she felt nothing; in the back the same thing happened. The sensations diminished instead of increasing. The pains of the head remained, the heat of the back and of the loins ceased. It will be seen that here effects were produced, and these effects are similar to those experienced by the three patients referred to above; but both the one and other were obtained by different procedures; it follows that the procedures have nothing to do with the matter. The method of MM. Mesmer and Deslon and an opposite method equally yield the same phenomena. The distinction of poles is therefore chimerical. It may be observed that when the woman saw she referred her sensations precisely to the spot magnetized; whereas when she did not see she placed them at random and in parts very remote from those to which the magnetism was directed. It was natural to conclude that it was the imagination which determined her sensations, true or false. One was convinced of it when one saw that after a good rest, feeling nothing more and having her eyes bandaged, the woman experienced all the same effects, although she was not magnetized; but the demonstration was complete when, after a sitting of a quarter of an hour, her imagination having doubtless become tired and cooled down, the effects, instead of increasing, diminished at the moment when the woman was really magnetized.

If she fainted, that accident sometimes happens to women when they feel themselves tight and embarrassed in their clothes. The application of the hands to the hypochondria may have produced the same effect on an excessively sensitive woman; but there is no need to have recourse to that cause to explain the fact. The

weather was then very hot; the woman had doubtless felt emotion in the first moment she made an effort to submit to a new unknown treatment, and after an effort too long maintained it is not extraordinary that one should faint.

This fainting has, therefore, a natural and known cause; but the sensations which she experienced when she was not being magnetized can only be the effect of the imagination. By experiments similar to those made by M. Jumelin in the same place on the following day, in the presence of the Commissioners, on a man with his eyes bound and on a woman with her eyes uncovered the same results were obtained; it was recognized that their replies were evidently determined by the questions put to them. The question indicated where the sensation ought to be; in place of directing magnetism upon them one only raised and directed their imagination. A boy of 5 years magnetized afterwards only felt the heat into which he had previously been thrown in playing. These experiments have seemed to the Commissioners sufficiently important to make them wish to repeat them with the object of getting further enlightenment, and M. Jumelin was good enough to comply with the suggestion.

It would be useless to object that the method of M. Jumelin was bad; for at that time the intention was not to test magnetism but the imagination.

The Commissioners agreed to bind the eyes of subjects who had been tested, not to magnetize them for the most part, and to put the questions with sufficient skill to indicate to them the replies. This procedure was not of a nature to lead them into error; it only deceived their imagination. In fact, when they are not magnetized their sole reply should be that they feel nothing; and when they are magnetized it is the impression felt which should dictate their answer, and not the manner in which they are interrogated.

Consequently, the Commissioners having repaired to M. Jumelin's house, they began by testing his man servant. A bandage prepared for the purpose, and which served for all the following experiments, was applied to his eyes. This bandage was composed of two gum elastic plasters, the concavity of which was filled with eider-down, the whole closed and stitched between two pieces of cloth cut into a round shape. These two pieces were attached one to the other; they had strings which tied behind. Placed over the eyes they allowed between them room for the nose and freedom of respiration without its being possible to see anything—even the light of day, neither through or above or below the bandage.

These precautions taken, for the comfort of the subjects tested and to ensure the certainty of the results, M. Jumelin's servant was persuaded that he was magnetized. Then he felt an almost general heat, movements in the belly, the head became heavy, gradually he became drowsy, and seemed to be on the point of falling asleep, which proves, as has been said above, that this effect depends on the position, on the weariness, not on the magnetism. Then, magnetized with his eyes uncovered, by presenting the iron rod at his forehead he felt prickings there. On the eyes being again bandaged, when the rod was presented to him he did not feel it, and when it was not presented, asked if he felt nothing in the forehead, he declared that he felt something come and go across the breadth of the forehead.

M. B——, a man of education, especially in medicine, when his eyes were bandaged, presented the same spectacle—feeling effects when nothing was done; often feeling nothing when something was done. These effects have even been such that before having been magnetized in any manner, but believing that he was so, for ten minutes he felt in the loins a heat which he compared to that of a stove. It is evident that M. B—— felt a strong sensation, since to give an idea of it he had to have recourse to such a comparison; and this sensation originated only from the imagination which alone acted upon him. The Commissioners, especially the physicians, made a large number of experiments on different subjects, whom they themselves magnetized, or whom they made believe that they had been magnetized. They magnetized indifferently, either at opposite poles or at direct poles or the other way about, and in all the cases they obtained the same effects; in all these tests there was no other difference than that of the greater or less power of the imagination. They therefore convinced themselves by the facts that the imagination alone can produce different sensations, and cause feelings of pain and heat, even considerable heat, in all parts of the body, and they concluded that it necessarily plays a large part in the effects attributed to animal magnetism.

(To be continued.)

SCIENCE NOTES.

THE familiar pictures of the old-fashioned Christmas with stage coaches embedded in snowdrifts represent probably no more than the conditions of a few years occurring at irregular intervals. It must be remembered that before the correction of the calendar Christmas Day corresponded to a date twelve days later, and there is truth in the weather proverb, "As the day lengthens the cold strengthens." The French Republic when it reorganized everything set up a month, from December 22nd to January 21st, which it called the snowy (*nivose*), and this year heavy snow fell in many parts of England about Twelfth Night. Mr. W. Sedgwick has been making a study of the information as to the weather to be extracted from the notes made by Evelyn and Pepys in their diaries for the years from 1648 to 1703. In only thirteen winters is a fall of snow mentioned, and in only three of these does it seem to have been heavy. Frosts sufficiently severe and prolonged to call for special notice occurred in ten years only. One of these was the hard long frost of the winter of 1683–4, when the Frost Fair was held on the Thames, and hackney coaches plied on its frozen surface. On the other hand, Evelyn notes eleven mild or wet winters. Mr. Sedgwick concludes that there is no evidence for the belief that the weather of the winters of the twentieth century differed from that of those of the seventeenth. There are, of course, great differences from year to year, and there may be a slow cyclic change—the period has been put at about thirty-two or thirty-three years; the weather of the years at one part of the cycle may have a general resemblance to each other, and differ from that of the years in another part of the cycle, but the average for a long period of years does not seem to have changed. The doctrine of averages asserts itself in all meteorological phenomena, and this fact is illustrated by the heavy rainfall of November and December in Great Britain after the very dry summer. The rainfall in the last two months of 1911 was heavy enough to restore the average for the year, and in some places was of exceptional magnitude. Sir Alexander Binnie has published a striking example from Ebbw Vale in South Wales, a district known by name to our readers in another connexion. The fall from October 18th to December 31st was 29.33 in., and on each of nine days it amounted to or exceeded 1 in. in twenty-four hours. Now the total annual rainfall in London averages under 25 in. During the last Christmas season the greatest rainfall on any one day was 0.27 in. in London, 0.33 in. in Oxford, 0.31 in. in Liverpool, and 0.42 in. in Yarmouth.

The Haversian system of canals in the ends of the femur and other long bones is met with only in birds and mammals, although it appears in outline in some reptiles. In most reptiles the structure is laminated, while in amphibians it is lamellar, which may be regarded as the simplest type. Many birds and mammals have the femur constructed on this type, others have it laminated, or there is a mixture of lamellar and laminated, while in some mammals the femur has a structure comprising all three types. These general results have been arrived at by Dr. Foot[1] from a comparative histological study of the femur in the frog, alligator, and snapping turtle, as well as of numerous birds and mammals.

[1] *Trans. Amer. Micr. Soc.*, xxx, 1911, p. 87.

MESSRS. E. LEITZ (London) ask us to announce that their business has been transferred to 18, Bloomsbury Square, W.C., a few doors from the British Museum.

UNDER the will of the late Mr. Thomas George Gibson, a solicitor of Newcastle, the Armstrong College of the University of Durham and the Newcastle Royal Infirmary each receives a bequest of £2,000.

THE LATE DR. HUGHLINGS JACKSON.

RECOLLECTIONS BY DR. MERCIER.

MAY I supplement Sir Jonathan Hutchinson's recollections of Dr. Hughlings Jackson as a coeval and a comrade, by the recollections of one of a younger generation, who knew him as a master? I was closely associated with him for some years, and have always regarded him with very great admiration, both for his intellect and his character. No man ever had a better claim to the title of genius, for his mind was of extraordinary quality. Not very wide, perhaps, in range, it had, within its range, a grasp and penetration truly wonderful.

His speculations on the ultimate nature of mental processes and their connexion with brain processes are the most profound, and over a wide field, the most consistent and explanatory that have ever been attained; and they will undoubtedly form the foundation of a future system of psychology that is yet to be elaborated. It is lamentable that he never gave to the world a complete body of doctrine. He had in contemplation a book, of which he published now and then in some journal of small circulation a chapter or part of a chapter, but the book was never completed, partly from his difficulty in putting his thoughts into words, and partly from his extreme fastidiousness in expression. His writings had the reputation of obscurity, but they were not in the least obscure to those who were familiar with his modes of thought and the subjects of his thought. They had, however, a lack of literary skill and a certain crudity of expression that was in striking contrast with the elaboration and clearness of his thought. Of this lack of skill he was himself conscious. He said that writing on his subjects was like driving six horses abreast, each of which needed continuous attention. I know that he wrote one paper thirteen times, and was still unsatisfied.

Sir Andrew Clark's dictum that neither Sir Jonathan nor Dr. Hughlings Jackson had a sense of humour is accountable only when we remember that Sir Andrew was a Scotsman. Sir Jonathan Hutchinson's humour is, indeed, uttered with a deliberate gravity that might easily deceive the voluble Scot, but Dr. Hughlings Jackson not only had the keenest sense of humour of any one I ever knew, but on the utterance of a witticism his face would light up, and he would throw his head back with uncontrolled delight. He it was who stopped the operator who had just removed a cerebral tumour, and was beginning to "make good," with the remark, "You have forgotten something"; and when the harassed operator looked up in alarm, continued, "You have forgotten to put in the joke." The subject of the operation was a Scotsman.

Going round the wards one day, Dr. Jackson was surprised to find one of the beds empty. "Where is this patient?" "He is gone out, sir." "Gone out?" "Yes, sir; he was discharged cured on Wednesday." Dr. Jackson instantly turned to me: "Put that down in the notes, Mr. Mercier. Put down that he was discharged cured, *and put down the medicine that cured him.*"

Driving with him in a cab, I noticed that the cab was taking a roundabout route, and asked Dr. Jackson if I should correct the man. "Leave it to him," said Dr. Jackson; "he knows best—he is a specialist in that department."

He was the originator of the expressions, "A clotted mass of spasm," "An optic disc that looks as if it had been trodden on."

Mr. Harris was, as Sir Jonathan Hutchinson says, frequently referred to as the *diabolus ex machinâ*, to whose malignant intervention untoward events were due. In particular, he haunted Dr. Jackson in order to hide his things.

I am able to supplement Sir Jonathan Hutchinson's information by informing him that Dr. Jackson did not escape the common lot of being referred to by a nickname. The name was by no means derogatory, however. He was generally known as "The Sage."

Dr. Jackson's memory was curiously erratic. He never remembered the name of a patient, though some were under his care for years. He would refer to them as "the man behind the door," "the woman with the hammer toe," and so forth. He could never find his way to his own wards without a guide, but any fact that bore on any of his doctrines, especially if it was corroborative, he could remember in the minutest detail. Even his own doctrines he did not always remember. If asked what he thought of So-and-so, he would say, if it were not one of the things that then occupied his attention, "I forget now, but you will find my opinion in the *Medical Times* for last October," or as the case might be.

Dr. Hughlings Jackson had a great love for Dr. Johnson, and, as Sir Jonathan Hutchinson has said, they had much in common. Dr. Jackson had all Johnson's love of truth, his power of forcible expression, and his love of epigram. "No good ever came of telling lies" was a favourite maxim of Dr. Jackson. Once, when I was assuring a little girl that we should not hurt her, he interposed. "I would not tell her that. We might hurt her, though we don't mean to." He would sometimes, however, indulge in casuistry, and put cases in which a lie might be justifiable.

He had also a great admiration for Herbert Spencer, with which he inoculated me, but I always thought—and in this I think Sir Jonathan Hutchinson agrees—that Dr. Jackson gave Spencer far too much credit as the founder and suggestor of Dr. Jackson's own doctrines. In this opinion I have been confirmed by reading Spencer's *Autobiography*, which destroyed not only my respect for the man, but also, illogically perhaps, my faith in his doctrines. It seems impossible that the opinions of a man who depicts himself as the glorified quintessence of a prig can be worth anything.

It was very rare to hear from Dr. Jackson a word in disparagement of any one. I have heard him speak, without mentioning his name, of a medical practitioner as the kind of man who would ask what is good for a cough, and whose talents would be appropriately employed in keeping an eel-pie shop; but when he referred to any specific person as "a man I should be very polite to," you knew it meant that the man was a bounder, or a humbug, or worse. A man who held the ophthalmoscope with the glass side next his eye, and declared he saw the disc, was a man Dr. Jackson would be very polite to.

No one could be associated with Dr. Jackson without being impressed with his high standard of rectitude. In face of a gross injustice that he was powerless to remedy, he would say, "The only thing to do is to say a great big damn, and have done with it."

"His mind," says Sir Jonathan Hutchinson, "was essentially deductive, and did not require a very large amount of material for his conclusions." This is emphatically true. He sought instinctively for a general principle; he leapt to first causes, and connected remote phenomena in a sweeping generalization. For instance, he attributed epilepsy, half jocularly, to a deficiency of bromine in the boiling gases that constituted the solar nebula when it filled the orbit of Neptune.

It was not customary for him to express much sympathy with suffering, but the sight of suffering that he could not relieve made him uncomfortable, and he would take some pains to avoid passing the bed of a patient that he was powerless to help.

Dr. Jackson had a weak voice, and his lectures were not well attended. Conscious of his tendency to talk over the heads of his audience, he would, when lecturing to a mixed class, be almost too elementary. Courteous and retiring as his manner was, he knew how to keep order, and could draw blood from a boisterous student by a cutting sarcasm. He was credited with suggesting to a student who asked for leave of absence on the ground of his health, that the holiday was to be taken "as a prophylactic measure," but the real author of this witticism was Mr. Rivington. On one occasion Dr. Jackson was to lecture on paralysis of the cranial nerves, and I collected for him a number of cases illustrating, among them, paralysis of every cranial nerve except the eighth, and put up a notice that he would demonstrate them. On this occasion he had a very large audience, and at the conclusion I expressed a hope that he was satisfied with the attendance. "There would have been as many," said he, "if you had put up a notice that Dr. Jackson would kill a pig."

As to the relation between body and mind, Dr. Jackson was a convinced, and even a dogmatic, parallelist. He said once that if he could be convinced of an interacting dualism he should abandon the study of the nervous system; his implication being that dualism means the negation of law. All expressions that imply interaction or community of nature between body and mind, such as

"psycho-motor" or "the centre for ideas," he called "scientific blasphemy." I do not remember discussing monism with him, but I have no doubt he would have regarded it as a mere verbal juggle.

Dr. Jackson did not read German, and when he found his name mentioned in a German publication, as he often did, he was impatient till he could get the passage translated. I used to compare him to a hungry cat, prowling round a cage in which a succulent mouse was securely ensconced.

His desire to secure *post-mortem* examinations once gave me some embarrassment. I went to a seaside town to make a *post-mortem* examination on a girl who had died in a convent. Permission to make the examination was granted on condition that a nun remained in the room the whole time. I took it for granted that the condition was imposed in order to secure that nothing should be taken away, and my suspicion was confirmed when I found that I could not get the investigator out of the room while I put the brain in my bag. I tried, by asking for one thing after another, to get her to go for them, but she was prepared for these tactics. Another nun was stationed outside the door, to whom she communicated my requests, and from whom she obtained, without leaving the room, the things I asked for. At length I took the bull by the horns, wrapped up the brain in oiled paper, and put it in my bag. "Are you going to take that brain away?" asked the nun, in what I regarded as a threatening tone of voice. "Yes," I said defiantly, "I am." "Then," said she, "I will get you some mould out of the garden to put in the place of it?" And she went herself and fetched it.

Dr. Jackson was like other people in appreciating the acknowledgement of his achievements, and in feeling sore when his ideas were appropriated without acknowledgement; but, though he has many times pointed out to me in his published articles his anticipation of doctrines that were set forth by others as new, he never cared to enter on a public controversy about priority, and he was careful to deprecate credit that he did not feel he had deserved. On being congratulated on the discovery of a tumour at the exact spot on the brain at which he had predicted it would be found, he disavowed any acumen in making the prediction. His sole ground, he said, was that he had seen a tumour in the same place in a previous case displaying the same symptoms. If he had predicted the localization of the tumour on the ground that, according to some doctrine of his own, it ought to be just there, he would have felt himself entitled to credit.

It is much to be regretted that he has left so much unpublished, and that his published articles have never been collected into a single book. The world is much poorer by his neglect in these respects.

INTERNATIONAL CONGRESS ON HYGIENE.

THE fifteenth International Congress on Hygiene and Demography will be held in Washington in September this year (23rd to 28th). The President of the United States will be the Honorary President of the Congress. The President will be Dr. Henry P. Walcott, of Massachusetts; the Secretary-General, Dr. John S. Fulton, of Maryland. The Congress will comprise two divisions; one of Hygiene, the work of which will be distributed among eight sections; the other on Demography.

HYGIENE.

Section of Microbiology.

The provisional programme of matters to be discussed in the first section of the Division of Hygiene (Hygienic Microbiology and Parasitology, President, Dr. Theobald Smith, of Harvard) is as follows: (1) Paratyphoid and allied bacilli, including the bacteriology of animal foods; (2) special or selective culture media for micro-organisms; (3) anaphylaxis, with special reference to infectious processes; (4) filterable viruses; (5) poliomyelitis and other infections involving the central nervous system; (6) the biology of uncinaria; (7) the relation of micro-organisms to their insect hosts.

Dietetic Hygiene: Hygienic Physiology.

The second section will discuss the following subjects: (1) The specific dynamic action of foodstuffs; (2) nutrition and growth, (*a*) general aspects, (*b*) the nutritive requirements in early infancy; (3) the rôle of inorganic substances in the nutrition of man; (4) the physiological significance of some substances used in the preservation of food; (5) practical dietetics, (*a*) cost and nutritive value of foods, (*b*) diet in relation to disease, (*c*) the influence of the preparation of food on its nutritive value; (6) ventilation in its hygienic aspects; (7) the hygienic physiology of exercise.

Hygiene of Infancy and Childhood.

The subjects to be discussed in the third section are the following: (1) The hygiene of the home; (2) the hygiene of the school child; (3) the hygiene of the school building; (4) hygiene of instruction; (5) hygiene with reference to physical defects; (6) the hygiene of the teacher; (7) the hygiene of open-air schools; (8) out-of-school hygiene; (9) municipal hygiene with reference to children; (10) propaganda of hygiene.

Industrial and Occupational Hygiene.

The following is the programme of the fourth section: (1) The physiology and pathology of work and fatigue; (2) occupation and fatigue neuroses; (3) the physiology and pathology of work in compressed air; (4) the effects of exposure to intense heat on the working organism; (5) diseases and accidents of miners and tunnel workers; (6) diseases and accidents of metal workers; (7) the dangers in the use of mercurial salts in the industries; (8) industrial accidents and trade diseases in the United States; (9) safety devices and the prevention of accidents; (10) dangerous trades or dangerous processes? (11) the relations of the Bureau of Labour to industrial hygiene; (12) industrial insurance the basis of industrial hygiene; (13) six problems in industrial hygiene; (14) age problems in industrial hygiene; (15) the economic aspects of hook-worm disease; (16) tenement house manufacture, the causes, evils, and remedy.

Control of Infectious Diseases.

The following is the programme of the fifth section: (1) Bacillus carriers—their influence in the dissemination of infection, especially in relation to typhoid fever, diphtheria, cerebro-spinal meningitis, dysentery, cholera, and influenza; what attitude shall sanitary authorities adopt towards bacillus carriers? (2) Importance of flies and other insects as carriers of infectious diseases. (3) Relative importance of aërial and contact infection in the dissemination of contagious diseases. (4) The administrative control of tuberculosis. (5) The rôle of bovine tuberculosis in the production of human tuberculosis. (6) The rôle of artificial immunization in the prevention of diphtheria, typhoid fever, plague, cholera, tuberculosis. (7) Sanitary measures against cerebro-spinal meningitis. (8) Etiology of poliomyelitis and the possibilities of its prevention. (9) Prevalence of gonorrhoeal vaginitis in institutions for children and its prevention.

State and Municipal Hygiene.

The discussions in the sixth section include hygiene, streets, water supply, and disposal of waste; legislative and administrative functions of boards of health.

Hygiene of Traffic and Transport.

The programme of the seventh section is as follows: Street traffic, tramway traffic; railway traffic, river and lake traffic, sea traffic.

Military, Naval, and Tropical Hygiene.

The eighth section will, under the heading of Military Hygiene, discuss the prevention of infectious diseases and camp sanitation.

Under the heading of Naval Hygiene: the hygiene of engine and firerooms force, with special reference to the tropics; the prophylaxis of venereal diseases in home and foreign ports; disinfection on shipboard; transportation of wounded; dressing stations; preparatory prophylaxis for wound healing; international basis for naval statistics; hospital ships, their functions as an integral part of the fleet in peace and war; the prevention of the spread of infectious diseases on board ship.

Under the heading of Tropical Hygiene will be discussed the rôle of insects in the transmission of tropical diseases; the prevention, immunization, and treatment of tropical diseases; tropical diseases of uncertain origin; laboratory methods as applied to the tropical diseases.

DEMOGRAPHY.

Statistics.

The following is the provisional programme of the Division of Demography: The development of vital statistics in the United States since 1900. Measures needed for immediate future. Progress toward the construction of life tables for the population of the United States. Mechanical methods of tabulating statistics, their advantages and their limitations. Infant mortality in the United States and other countries: (*a*) How do the changes in infant mortality compare in direction and rate with the changes in mortality at other ages? (*b*) How can demography best measure the effect of efforts to diminish infant mortality? The classification of causes of death, with especial reference to the changes made in 1909 in the international classification and to other changes that may be needed. Statistical evidences of changes in the death-rate from tuberculosis. The present condition of criminal statistics in the United States and European countries. Diagnoses of the causes of death. The margin of error to which they are subject in various places and for various diseases. Measurements of the healthfulness of occupations. Statistical evidences of the effect of intemperance upon mortality. Statistics of pauperism. Sources and methods. The statistics of accidents. The effect of social and economic position upon the death-rate. The present position of municipal vital statistics on Europe and the United States. The training of demographers: (*a*) How are trained men obtained in foreign countries? (*b*) How may the demand for and supply of them in the United States be increased? Validity of substitutes for the birth-rate proposed or used in the United States. The present position and the prospects of American birth-rate statistics. American statistics of marriage and divorce. Statistical bases for a system of pensioning members of the Civil Service.

STATE SICKNESS INSURANCE IN GERMANY.

DR. ADOLPH RENSHAW, of Sale, Chairman of the Altrincham Division of the Association, having intimated his intention of making inquiries in Germany on the medical aspects of State sickness insurance during July and August, 1911, the Chairman of the State Sickness Insurance Committee suggested certain questions upon which it would be useful to have information, and asked Dr. Renshaw to consider himself the accredited agent of the Committee during his visit to Germany.

Dr. Renshaw's report is now published by instruction of the Committee. Though the inquiries were made by Dr. Renshaw on behalf of the Committee, the statements made rest entirely upon Dr. Renshaw's authority and are not necessarily accepted by the Association.

MATTERS ON WHICH INFORMATION WAS DESIRED.

The following were the matters suggested to Dr. Renshaw as points upon which information was desired:

1. Any difficulties which have arisen owing to free choice of doctor being given, and means whereby these difficulties have been met.
2. Any special difficulties which have arisen in districts where free choice of doctor has not been granted. Information as to attitude of public particularly valuable.
3. Information as to the way in which complaints against doctors are dealt with. It is understood that in some districts there are elaborate courts of honour or committees of some kind; information on this subject would be useful.
4. Any information as to the opinion of the profession on method of remuneration.
5. Effect of insurance system on recruiting for the profession. Is it believed to have had favourable or unfavourable effects as regards inducing the right type of men to enter the profession?
6. General information as to amount of remuneration, for example, inclusive payment or payment for extras, and, if so, what are the extras, and how are they paid for?
7. Any information as to method of organization of the profession which seems to have a special bearing on the insurance question, and might be useful here.

REPORT.

In considering the following report it is necessary always to keep in mind fundamental economic and social differences that exist as regards conditions of work and everyday life in Germany and England.

The medical profession in Germany has not up to the present enjoyed as a whole equal financial or social position to that experienced by the English doctors during the past quarter of a century; they are fighting to improve their position, and have everything to gain; the profession in England, on the other hand, is fighting chiefly to prevent new conditions causing them loss both in status and from the economic point of view—that is, they have much to lose.

The people of Germany are a disciplined race, their individuality and independent spirit has been merged in a military system which makes organization a simple matter, and in a corresponding degree makes easy the administration of such a method as invalidity insurance. The English masses are only accustomed to discipline either indirectly or not at all, and so have developed a natural antagonism to anything in the shape of curtailing their accustomed independency or freedom of action, a spirit which rapidly becomes active in the face of opposition.

These factors must be taken into account when comparing the two systems. The German doctors as a whole are satisfied with their insurance scheme. It works smoothly, and their position has immensely improved from every point of view since the introduction of the bill.

They do not like, however, the extension now before the Reichstag which raises the income limit from £100 to about £125, and introduces classes of the community before treated as private patients.

1. *Free Choice of Doctor.*

No difficulties have arisen owing to free choice of doctor. The free choice is practically universal, except that in certain big works and in the local area of Westphalia special medical officers are appointed.

Dr. von Wilde (Frankfurt), physician, says: "No difficulty arises. The patient can change, if necessary, every quarter, in the country places every year." Dr. Eugen Egenolf (Kelheim) says: "Doctors are not appointed. All can belong to the Krankenkasse, which is divided into districts."

Dr. Seckbach (Treasurer to the Aerzte-Verband für freie Aerztwahl, Frankfurt) states that 260 doctors are on the list in Frankfurt. They had some difficulty in persuading the Post Office and railway to agree to the free choice, but ultimately an agreement was come to to try the method for two years. At the end of that time the authorities of both—that is, railway and Post Office—expressed themselves as so pleased with the system that they had no intention of asking for a return to the old method of appointing their own medical officers.

Herr W. Low (a foreman manager in works at Hochst) says that the men would be quite satisfied with the invalidity insurance system if they could always have free choice; this they had not in his works (6,000 men), but appointed medical officers which were elected yearly. With regard to the Extension Act now before the Legislature one complaint is that the free choice of doctor is not clear.

2. *Attitude of Public to Free Choice.*

There are no districts where free choice of doctors has not been granted; medical officers are appointed to certain works, and there are private societies which employ their own doctor, but this is exceptional and apart from the general scheme.

To prevent undercutting in such appointments, a fund exists to compensate for loss sustained by medical men refusing to work under the recognized rate. (Dr. von Wilde's subscription to such fund or funds amount to £5; the usual subscription is £1.)

The attitude of the public is wholly in favour of free choice of doctor; the invalidity insurance is included in a system which also contains old age pensions and workmen's compensation insurance, one payment for all; it is therefore sometimes a matter of difficulty to differentiate as regards details of payment, procedure, etc. The whole scheme of insurance is so much an integral part of German life that the attitude of the public is that of the usual attitude to the obvious.

Herr Low says: "The workpeople are in favour of the principle of insurance, but feel very strongly that they ought to have the right of free choice; when they have not, they have no option in the matter, but must employ the elected medico. Also that there is a great deal of malingering difficult to cope with; certain officials are told off as supervisors to watch cases of suspicion."

Mr. Schofield (manager of works near Cologne, Messrs. Peters) says that they employ a works medical officer. In his experience, when there is free choice of doctor, the doctor gets most patients on his list, and so the largest income, whose attitude is most complacent during sickness or supposed sickness. They pay Mks. 9 for medical attendance on man and family, Mks. 3.50 on single man.

3. *Mode of Dealing with Complaints against Doctors.*

The complaint must be sent in to the Krankenkasse in writing, and is thence referred to the doctor for his explanation and comment. This usually ends the matter. If not, a commission is formed upon which the medical profession is fully represented, but members are chosen who are not in professional contact with the defendant. The matter is fully considered and probably settled. In the very rare cases in which this result is not attained a second commission is formed of entirely different members who finally settle the matter. The doctor does not exist as an individual as regards such a matter. The Krankenkasse defends or in case of need punishes its members. Those having complaints to make must deal with the Krankenkasse (association), and cannot directly attack the doctor.

With regard to courts of honour it is understood that such do exist, but, according to Dr. von Wilde, are thought little of, the medical men considering that such courts have not the judicial capacity to deal with cases needing an impartial view. All the evidence pointed to the fact that the doctors occupied an exceedingly strong position. The patients are compelled to keep the proper hours for consultation. If they do not the doctor refuses to see them.

Patients difficult to deal with are rare; the doctor is compelled to attend those placed on his list. Patients who have not made any choice are distributed geographically.

It will be understood that the possibility of abusive or difficult patients is very much minimized in a country employing universal military service, owing to training in discipline and obedience that follows.

4. *Method of Remuneration.*

The method of payment is universally per capita.

Dr. von Wilde: "The doctors prefer it."

Dr. Seckbach: "No doubt the payment for work done would be better, but we recognize that it is quite impossible." He says there are certain associations in Germany which pay so much a visit or consultation, usually Mk. 1.

With regard to the income derived by this per capita method, two medical men in Frankfurt receive Mks. 14,000 yearly. They both live in the more densely populated part of the town.

Roughly, the receipts last year were, for Frankfurt, Mks. 641,000, the expenses Mks. 11,000. This was divided among 260 doctors.

The capitation sum is 4s. 3d. in Frankfurt.
" " 5s. in Cologne.
" " 4s. 2d. in Leipzig and Munich.

For this advice only is given, all medicines, drugs, splints, trusses, dressings, etc., are supplied in addition.

For a family where the husband is suffering from total invalidity, the sum of 9s. 6d. is paid; this covers all attendance, whether the family is large or small.

Dr. Egenolf (Kelkheim), a typical country practitioner, says that the invalidity insurance system has been a God-send to him. Previously the working classes never paid him anything worth consideration (the working man of the artisan class moves rapidly from town to town under the German system of labour bureaus). Now he obtains a fixed income from this source, which can always be relied upon. He strongly supports the per capita method of payment.

5. *Effects on Recruiting for the Profession.*

The effect of the insurance system on recruiting for the profession has been *nil*. The type, which is certainly not a low one in Germany, has remained constant.

Dr. von Wilde: "The insurance system has no influence on the recruiting for the profession: the standard of the type has not been lowered." Dr. Egenolf says that it is a great thing for the young and struggling members of the profession. They are glad to have something fixed, which very often they would not get from private patients. Dr. Seckbach was surprised at the question, and Dr. Hutzen took the same attitude; the great organization of the German profession, commencing with Leipzig, dates from the introduction of the invalidity insurance system. Doubtless, therefore, in the German medical mind the two ideas of insurance and improvement in status, etc., are co-operative.

No evidence whatever can be found that the insurance system has had any effect on recruiting for the profession or has had any unfavourable effect as regards inducing the right type of men to enter the profession. If anything, the evidence is all the other way, as the free choice of doctor enables a newly qualified man, by obtaining a position on the list, to depend upon a certain amount of practice for which payment is sure.

6. *Amount of Remuneration.*

The per capita payment includes all ordinary attendance, the only extra being a midwifery fee of Mks. 15 for a day confinement and Mks. 20 for one taking place at night, no extra for midwifery complications, for example, use of forceps, version, etc.

There is an extra fee provided if a second opinion is needed; this is usually Mks. 50. There are also fees for operation; these are very small compared with the English idea of such fees.

The Union of Doctors (not the Insurance Fund) pays Mks. 3 for a night visit, and the railway companies in Frankfurt pay a similar fee; mileage beyond a certain fixed area is paid only by the doctors' Fund; this as a rule never exceeds the sum of Mks. 3 in any one case. Accounts are settled quarterly in all cases. In Cologne a fee of Mks. 4 is also paid extra for a night visit; the capitation sum here is also higher—Mks. 5.

Medical men appointed specially to examine cases of malingering are paid special fees.

It is usual to pay a fee of Mk. 1 for examination of a case for insurance.

The workman contributes two-thirds, employer one-third, the State nothing towards the premium for invalidity insurance.

Invalidity insurance treatment, as a rule, lasts for half a year; beyond that time the patient pays his doctor.

7. *Organization of the Profession.*

The organization of the profession in Germany is exceedingly good; the Leipsiger Verband, to which all associations in Germany are allied, claims never to have lost in a contest.

In Frankfurt not only has the profession persuaded the Post Office and the railways to adopt the system of free choice of doctor, but as an example of the power of organization it was customary in every theatre at each performance to have a doctor in attendance; the payment for this was two free seats. The Aerzte-Verband pointed out that this was insufficient, and after a sharp contest obtained a payment of £30 a year, in addition to the two free seats; this was regarded as a highly satisfactory result.

The Cologne Association (Köln Verein) is just concluding a strike—which is ending entirely in the favour of the medical profession—over a hospital question. The whole German profession has been organized for about ten years (Dr. von Wilde), and every year sees improvement in this respect; the outsiders are very few.

The general public is strongly in favour of employing medical men on the insurance list, as they consider this a proof of competency; the medical men, on the other hand, are keen to be admitted to the list.

Dr. von Wilde considers a doctor is kept in order sufficiently by public opinion; if work is shirked or badly done his list of patients proportionately decreases. This opinion may be contrasted with that of Mr. Schofield, manager of Messrs. Peters's Works, Cologne, that the doctor of the most benevolent disposition obtains the largest number of artisan patients. Probably both opinions are correct.

THE EXTENSION TO THE INVALIDITY INSURANCE BILL.

The whole profession in Germany is opposed to the proposed new conditions, and are universally cancelling their contracts as from the beginning of 1912; they hope to obtain substantial concessions, for example, a rise in the per capita sum in proportion to the extension of the wage limit; about 700,000 more of the population are affected, and if the bill passes in its present form from one-half to two-thirds of the population of Germany will be under the invalidity insurance system.

The extension includes agricultural workers, servants, casual labourers, workers in home-trades, home-workers, members of ships' crews, shop assistants and apprentices, dispensers in chemist's shops, performers in theatres and orchestras, and teachers and masters in private schools. A voluntary system is developed to embrace small shopkeepers, farmers, and members of employers' families, according to average daily wage, formerly placed at a maximum of Mks. 4, now Mks. 5, and possibly by statute raised to Mks. 6. The funds may grant special treatment and nursing expenses; the reduction in the amount of the insurance allowance must not be more than 25 per cent. of the sum allowed for invalidity. A period of twenty-six weeks is allowed for an illness, but this may be extended to a year. Eight weeks are allowed *post partum;* the doctors hope by negotiations to have this reduced to four.

It is understood that most of this new legislation is put forward owing to socialistic pressure; the Social Democrats are to-day the strongest party in the empire numerically, 3,259,000, though they only control forty-three seats in the Reichstag. It is understood that certain compromises have been made in the new extension bill by understandings arrived at between the Centre Party and the Social Democrats.

The burden to German industry already amounts to 800 million marks per annum, the additional cost by the new bill will be 135 million marks, so that the future cost will be three million marks per diem.

The employers of Plauen, Chemnitz, Essen, have addressed the Reichstag to the effect that already the limit of a bearable burden has been reached.

PERSONAL COMMENTS.

The main idea of my visit to Germany was to discover, if possible, defects in the working of the invalidity insurance system in that country. It is only honest to admit that it is impossible, after visiting the residences of the medical profession, to entertain any other idea than that existence is comfortable.

The medical profession in Germany regard the insurance system as a solid basis of practice, and the wonderful organization that deals with huge masses of the sick poor easily and skilfully compels admiration. Comparing the chaos and overlapping that prevails here, and the waste of energy, coupled with the doubt that must occur to the mind of any keen observer that the treatment of disease among the poorer classes in this country can be considered as a whole satisfactory from any point of view; and then, turning to the German methodical and scientific organization, recognizing that the medical man rejoices in the new system after experiencing the old, listening to unanimous approval, causes the mind to concentrate on the one final thought that the Invalidity Insurance Bill now before this country, with all its faults, contains a germ from which may develop lasting good both to the community and the medical profession.

I give this opinion, of course, based on the broadest principles; details of administration and organization exist capable of improvement in Germany; but, to give one example, when it is considered that a per capita payment of 5s. has been reached in Cologne, excluding entirely the provision of anything but advice, and that in this country, with a much higher standard of living, the contract per capita payment has not universally reached 4s., with all medicines, etc., to provide, the thought is compelled that we can learn something from our Teuton *confrères*.

LITERARY NOTES.

THE November number of the *Empire Magazine* contains, among other interesting matter, an article entitled "The Real John Bull," by Mr. J. K. Sadler. He says the typical "John Bull" of the caricaturist is as dead as Sir Roger de Coverley, or may we say, more appropriately, "Squire Western"? "In his place is found the figure, well preserved, of a man of whose age one can only definitely say that he is on the wrong side of 30."

He is in comparison slenderly made, and his well cut and well creased trousers end in narrow patent leather boots; he is neat without coxcombery, and his face is longer and more bony than the other's; his eyes have rather a pondering look, and his whole expression is one of unaggressive self-control, but he has many shades of expression, and can do much more than a lowering frown and a rather brainless guffaw. He has learned the finer touches of facial mobility, and he abhors back-slapping and horseplay. . . . He plays golf and tennis, rides cycles, and rows with some finish. He takes his sports a trifle seriously, and as often as not prefers tea and cigarettes to a cigar and a whisky-and-soda, whilst a churchwarden and brandy and water hot are things at which he would raise his eyebrows. In short, he is a serious, executive sort of man, who reads a good bit and does everything rather hard. He has lessened his waistband and refined his tastes, and though he may be in some ways less lovable than the dear, pig-headed blustering old ignoramus he has succeeded, he still has a heart, somewhat less accessible, and courage, a good deal less on tap. This long-limbed, rather bony man of serious mien is difficult of approach in train or club, and his outworks of guarded urbanity ward off the ready contact of mind which his full-blooded ancestor delighted in.

We may be allowed to add that the creation of the older type, whose characteristics are embodied in the name "John Bull," is usually ascribed to John Arbuthnot, Queen Anne's famous physician and the friend of Swift, Pope, and other wits of that day. Whether he actually invented it or not seems to be doubtful, but it is certain that he fixed the type and stamped it on the national mind in his *History of John Bull*. The December number of the *Empire Magazine* contains a number of interesting articles on the King's tour in India, Christmas in India, Christmas in Australia, and others of like character.

To the November number of the *Magazine of the London (Royal Free Hospital) School of Medicine for Women* Mr. Willmott Evans contributes an account of an early gastrotomy. It was performed at Leyden in 1635 by a surgeon named Schwabe for the removal of a knife ten fingerbreadths in length which a peasant had thrust into his throat with the object of causing vomiting. It slipped into the stomach. The man's case was so piteous that it excited much interest, and after a consultation of physicians it was decided that an attempt should be made to remove the foreign body. The operation is related by Dr. Becker, whose report, translated by Mr. Lakin, runs as follows in seventeenth-century English:

The Body being prepared and all Things necessary provided, at length, on the 9th. of July, one and forty days after the Accident, there met the Dean of the Faculty, with the Honourable the Members, together with the Students, Masters of Arts, in company with that most experienced Chirurgeon, Daniel Sewabius, my venerable Friend, now in Heaven, who calling upon the Divine Assistance and Benediction the Rustic who, with undaunted Courage, waited the Section, was bound down on a Table, and, the Place being marked out, the Incision was made toward the left Side of the Hypochondrium, some two Fingers breadth under the short Ribs, according to the Direction; and first the Skin and fleshy Pannicle (there being no Fat seen) with the subjected Muscles, as also the Peritonaeum, were carefully divided, when, altho' the Ventricle did somewhat sink down and avoiding our Fingers, did not so presently admit of Apprehension, a little staying the Operation; yet at length attracted by a Needle crooked, it shewed that the Knife was there, which being laid hold on, through the Coats of the Ventricle and the Point brought upwards, the said Ventricle, above the same was a little incised, and the Knife successfully extracted; which was viewed by all the Bystanders, applauded by all, and by none more than the Patient himself, who professed that this was the very Knife he formerly had swallowed. The Knife being thus successfully brought forth and the Patient eased of his Bands, the Wound cleansed of the Blood, and the Abdomen, that had been incised, closed together with five Sutures, by their Interstices the Balsam was instilled warm and Dossils therewith impregnated laid on, and then a Cataplasm of Bole, the White of an Egg and Alum, to allay all Inflammation on the Outside.

By the fourteenth day the patient was doing well and made a complete recovery. Mr. Willmott Evans quotes the following entry in *Evelyn's Diary* under date August 28th, 1641:

But amongst all the rarities of this place (Leyden) I was much pleased with their anatomy school, theatre, and repository adjoining, which is well furnished with natural curiosities: skeletons, from the whale and elephant to the fly and spider, which last is a very delicate piece of art to see how the bones (if I may so call them of so tender an insect) could be separated from the mucilaginous parts of that minute animal. Amongst a great variety of other things I was shown the knife newly taken out of a drunken Dutchman's guts by an incision in his side, after it had slipped from his fingers into his stomach. The pictures of the chirurgeon and of his patient, both living, were there.

It is not quite certain, says Mr. Willmott Evans, to what case this account refers, but as there was a remarkable operation at Leyden for the removal of a knife from the stomach of a man in the year 1635, it is probable that the knife then removed was the one seen at Leyden by Evelyn in 1641.

The second number of the *North of England Clinical Journal*, the organ of the Newcastle-upon-Tyne Clinical Society, which is edited by Dr. George Foggins, contains among other interesting contributions an excellent paper entitled, Important Problems in the Diagnosis of Diseases of the Nervous System, by Dr. Risien Russell, and an account of the pirate-doctor Thomas Dover, inventor of the powder which bears his name, by Dr. R. E. Sedgwick. Dover, after studying both at Oxford and Cambridge, lived some time with Sydenham. He had an adventurous career, and was nearly 50 when he started a practice in London. His blunt ways and contempt for the conventionalities of the profession made him unpopular alike with physicians and apothecaries. A man who could speak as follows could scarcely expect to be beloved by his brethren:

I never affronted any apothecary, unless ordering too little physic; I must confess I never could bring an apothecary's bill to £3 in a fever, whereas I have known some of their bills in this disease amount to £40, £50, and £60. When I have attended some of my patients, they have very often given it as a reason for not seeing me that I did not prescribe every time I visited them, and have likewise told me they learned this doctrine from the apothecary, "that it is your writing physician only that has a title to a fee." To me this appears very plainly a deceit, however plausible to others, and to make it clear to you, only consider that if the physician writes, it must be ten or twelve shillings at least in the apothecary's way, and for my own part, I do not look upon this to be at all better than picking one man's pocket to put money into another's. It is my own opinion the less apothecarys' gains are, the better the patients may afford to fee the doctor.

His partiality for mercury earned for him the nickname of "The Quicksilver Doctor," which he greatly resented. He is believed to have died in 1642 at the age of 80.